

16 May, 2001

MODIS sensor Working Group (MsWG) Summary

Attendance: Bill Barnes, Chris Moeller, Eddie Kearns, Eric Vermote, Gary Toller, Jack Xiong, Jim Young, Roger Drake, Steve Platnick, Stuart Biggar, Wayne Esaias, Zhengming Wan, Gwyn Fireman, Nianzeng Che

Scheduled Items

Band 26 Striping:

- Detector 10 (product order) shows highest degree of striping. Detectors 9 and 1 show a lesser effect.
- Night data shows little or no striping – only a 3-5 DN fluctuation.
- Striping was seen in Band 26 early on-orbit, with the initial ITWK/VDET setting of 79/190 as well as with the later setting of 79/110.
- Pre-launch data shows Detector 9 as having slightly different non-linearity at low radiance only.
- **We use m1_unscreened values for Band 26 L1B processing.** Typical radiances are closer to SD radiance with screen closed.

Solar Diffuser Analysis:

- Analysis of Solar Diffuser data supports the idea that Band 26 detectors are non-linear. The m1_screened value is higher than m1_unscreened for all detectors, indicating non-linearity. Striping could result from channel-to-channel differences in non-linearity. The m1_screened/m1_unscreened ratio for other bands is close to 1
- The m1_screened/m1_unscreened ratio shows Detector 9 (2 on plot) as having the highest degree of non-linearity, but not enough to explain the degree of striping.
- An offset term is not supported by the data.
- The m1_screened/m1_unscreened ratio for A-side electronics (with higher VDET) shows similar variations, but the ratio is closer to 1.

SRCA Analysis:

- Note: Left edges of band positions shown on plots correspond to center of detector.
- SRCA tests seem to show crosstalk from Band 7 into Band 26 – but apparent crosstalk magnitude would not result in observed relative detector response.

- Detector 9 has a response different from other detectors. Is “ringing” temporal or spatial in nature?
- Origin of negative signals is unknown. The subtracted value, dn_dark (~6 DN), is the space-view-subtracted average of SRCA sector ends, outside of the SRCA port. Sector rotation observations do not show scattered light in the SRCA sector.
- SBRS suggests comparing SRCA crosstalk with SpMA.
- The thermal IR test shows response of only about 5 DN.
- Other analyses in progress show crosstalk from Band 26 into Band 24.

Moeller:

- Cloud observations in Band 26 are all at the low signal end. If we must make a tradeoff, it would be better to optimize low-end response at the expense of higher-radiance response.
- Crosstalk from Band 7 merits further investigation and may explain why Earth surface features are sometimes seen in Band 26 even when there is dense cloud cover.

[Action 0105-01: Are there any significant differences between channels in Band 26 RSR?](#)

Platnick and Vermote will meet with MCST staff at a later date to go over Band 26 striping analysis in detail.

Around the Table

Biggar: Will be away next week.

SBRS: Has been discussing the system-level FM-1 SD test with the program office.

MCST: Will continue SRCA data analysis, derive a set of crosstalk correction coefficients and test with real Earth scenes.

compiled by G. Fireman 17 May, 2001